

I CLAIM:

1 1. A control device for rotating a tube supporting a roller member to be wound
2 onto or unwound from said tube, said device comprising at least an electric motor
3 housed in said supporting tube and drive means comprising a reduction gear unit
4 for transmitting the rotation from said motor to said supporting tube, wherein said
5 electric motor comprises at least four poles.

1 2. A control device as claimed in claim 1 wherein said electric motor is a three-
2 phase electric motor and said device incorporates an electronic unit for supplying
3 electric power in a controlled manner to said motor.

1 3. A control device as claimed in claim 2, wherein said drive means comprises
2 a single-stage mechanical reduction gear.

1 4. A control device as claimed in the claim 3, wherein said single stage mechan-
2 ical reduction gear is a planocentric reduction gear comprising a ring gear provided
3 with a given number of teeth, eccentrically and idly mounted on the output shaft of
4 said motor and connected to the output shaft of said reduction gear, said gear wheel
5 meshing with the internal teeth of a stationary ring gear, the number of said internal
6 teeth being greater than said given number number of teeth on said ring gear by one
7 tooth.

1 5. A control device as claimed in claim 1, wherein said motor is an asynchronous
2 single phase motor.

1 6. A control device as claimed in claim 1, said control device further comprising
2 an eddy-current brake of the flux deviation type, coaxial to and partially housed inside
3 of said motor, and an angular position detector secured to a shaft extension of said
4 motor, said angular position detector being an optical encoder.

1 7. A control device as claimed in the claim 2, wherein said electronic unit
2 comprises a power stage in which a single- phase waveform is transformed through a
3 rectifier and an inverter into a three-phase system for feeding said motor, said inverter
4 being driven by a Pulse Width Modulated generator controlled by a microcontroller
5 in accordance with an algorithm processing detected data, calculated data and stored
6 data, said stored data being stored in a non- volatile memory unit, and in that said
7 detected data comprise the ON/OFF state of the drive control signals, the feedback
8 of the current signal on the motor and the feedback of the angular position of the
9 motor shaft.

1 8. A control device as claimed in claim 7, wherein said calculated data comprise

2 the speed of the motor shaft, and that said stored data comprise the limit switch
3 positions, the steady state speed and torque, the transient gradients.

1 9. A control device as claimed in claim 8, wherein it comprises a thermal
2 protection switch, whose circuit is fed in parallel to the motor and directly controlled
3 by said electronic unit.

1 10. A control device as claimed in claim 1, wherein said control device has
2 an eddy current brake device of the flux deviation type comprising a mobile part
3 consisting of an iron cylinder (51), to the end of which a disk is fastened for supporting
4 an annular clutch member pushed against a stationary contrast surface by a spring
5 seated in a seat formed in the rotor of said motor, said rotor having a short circuit
6 ring.

1 11. A control device as claimed in claim 1, said control device further compris-
2 ing an eddy-current brake of the flux deviation type, coaxial to and partially housed
3 inside of said motor, and an angular position detector secured to a shaft extension of
4 said motor, said angular position detector being a magnetical encoder.